

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: March 17, 2021

LOCATION OF CONFERENCE: Virtual meeting held via Zoom

ATTENDED BY:

NHDOT

Sarah Large
Andrew O’Sullivan
Mark Hemmerlein
Deidra Benjamin
Marc Laurin
Jason Tremblay
David Scott
Tom Jameson
Tobey Reynolds
Meli Dube
Andrew Czachor
Corey Spetelunas
Bill Saffian
Kirk Mudgett
Kerry Ryan
Roger Appleton
Ralph Sanders

ME DOT

Eric Ham
Kristen Chamberlain
Jeff Folsom

ACOE

Mike Hicks

EPA

Jeanie Brochi

NHDES

Lori Sommer
Karl Benedict
Chris Williams
David Price

NHB

Amy Lamb

NH Fish & Game

Carol Henderson
Mike Dionne
Cheri Patterson

The Nature Conservancy

Pete Steckler

**Consultants/ Public
Participants**

Christine Perron
Jim Foley, Lamprey River LAC
David McNamara
Mike Leach
Jerry Fortin
Pete Walker
Greg Bakos
Greg Goodrich
Nicole Martin
Frank Koczalka
KC Moran, City of Manchester
Owen Friend-Gray, City of
Manchester
Stephen Hoffmann
Samuel White
Brian Colburn
Vicki Chase
Kevin Ferguson
Keith Snow
Tim Higginson

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH: *(minutes on subsequent pages)*

Finalize Meeting Minutes.....	2
Pittsfield, #43049	2
Bennington, #29486 (X-A004(156)).....	3
Jefferson, #42558 (X-A004(910)).....	5
Sutton, #42419 (X-A004(839))	9
Sutton-New London #40511 (X-A004(421)).....	11
Manchester, #29811 (X-A004(311)).....	14
Candia-Raymond, #43221 (X-A0005(058)).....	16
Portsmouth-Kittery, #15731 (A000(909)).....	17

(When viewing these minutes online, click on a project to zoom to the minutes for that project.)

NOTES ON CONFERENCE:**Finalize Meeting Minutes**

Finalized and approved the February 17, 2021 meeting minutes.

Pittsfield, #43049

Vicki Chase of TRC Environmental and Tim Higginson, PE of WSP presented the project, which is replacement of twin 27" culverts carrying Berry Pond Brook under NH 107 in Pittsfield.

V. Chase introduced the project, which is in the conceptual design phase. Berry Pond Brook flows west to east under NH 107. Historically the brook flowed west of its current location, but the watershed and stream channel have been manipulated. A small portion of the brook still flows to the west, but most of it was diverted to its current location.

Tim Higginson provided a description of the existing culverts, they have a concrete headwall on the upstream side and a stone headway on the downstream side, and are in near failing condition. The watershed measures 395 acres, and Berry Pond Brook flows through a 48" culvert downstream under True Road before making its way to White's Pond. The downstream culvert provides a design constraint as increased flows will overtop the culvert. Both the twin culverts and the downstream culvert were overtopped during the 2006 Mother's Day event.

Existing Twin 27" cmp Capacity = 69 cfs (Under Route 107)

Existing 48" cmp Capacity = 110 cfs. (Under True Road)

Proposed Culvert Design Goals

- Improve safety for the travelling public by replacing deteriorated culvert
- Eliminate guardrail for safety benefits
- Relocation of proposed culvert for proposed clean water bypass during construction
- Enlarging hydraulic opening while protecting downstream 48" culvert from high flows
- Accommodate constraints of shallow cover over crossing
- Low-cost replacement for District constructability

WSP has three design options. The scour stone designs currently being presented are a worst case scenario, and will be minimized through the use of a plunge pool. The pipes are slightly longer to accommodate the elimination of guardrail.

Option 1 – twin 30" RCP's south of existing channel – Capacity =78 cfs

Option 2 – 42" RCP single pipe parallel to existing culverts – size constrained by cover – Capacity =74 cfs

Option 3 - 34"x 53" RCP Elliptical (42" RCP equivalent) Capacity = 78 cfs

Resources V. Chase provided a brief overview of resources – Berry Brook Pond is a perennial Tier 2 stream, with a forested / palustrine emergent wetland on the upstream side. Resources were delineated in December. No water quality impairment, no FEMA floodplains, and no fisheries concerns were expressed by NHFG. Pennichuck Water Works owns property to the south. No rare species occurrences at the state level, and NLEBs and small whorled pogonia were listed as potentially occurring on the IPaC review. The habitat has been reviewed for SWP and will provide a memo saying that no SWP pogonia habitat will be affected by the project. Cultural resource coordination is underway.

Questions S. Large – Tier 2 crossing, will the proposed crossing pass the Q100? T. Higginson, the downstream crossing will not accommodate the Q100 storm. S. Large, is there a preferred alternative? T. Higginson – we are working with District to solicit input – no preferred alternative at this time.

Karl Benedict, NHDES– Tier 2 Stream crossings have to follow 904.04 [design criteria in 904.07] and the proposed crossings aren't meeting the requirements. The crossing needs stream simulation. Understanding that there is a downstream constraint, has there been an effort to coordinate on the downstream crossing? Likely will require mitigation. Suggests that it should be self-mitigating by meeting rules or mitigation will be required. **T. Higginson**, WSP has discussed with the District, the downstream structure is town-owned and they would have to have further discussions. **S. Large**, since it is a town-owned structure the most DOT will likely do is let the town know that the state is planning to replace the subject culvert. **K. Benedict** agrees, but thinks it would be helpful to get the town on board.

Lori Sommer, NHDES– A plate arch might provide the stream simulation. As designed the length of scour stone plus the pipe itself would have to be included in mitigation. **V. Chase** said that as depicted there are about 80 linear feet of impact [does not include the pipe itself]. **S. Large** said that DOT would want to discuss if the impacts through the pipe itself would require mitigation since it is not currently a natural channel. Lori agreed that it could be discussed.

S. Large asked if the watershed was able to be refined, and if the Tier 2 watershed size was certain. **V. Chase** said that according to WSP's analysis most of the stream goes through the subject culvert. **T. Higginson** said there is a flow splitter, some flow goes toward the old channel during higher storm events but under low flow it goes toward the subject culvert.

Carol Henderson, NHFG – no perches? What is the timeframe for construction? **T. Higginson** – no perches on either end. District hopes to replace the culvert in late summer of 2021.

Amy Lamb, NHNB – No comments.

Mike Hicks, USACE – No comments.

Pete Steckler, Nature Conservancy – agrees that a pipe arch would be more compatible, of the three presented the elliptical culvert comes closer to meeting the rules.

Jean Brochi, USEPA – No additional comments.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Bennington, #29486 (X-A004(156))

D. McNamara presented the project, history, and existing conditions of the site, as well as potential impacts and mitigation requirements. The project involves the replacement of an existing 10' x 7' x 30' precast concrete box culvert carrying Russell Brook under South Bennington Road, in Bennington, NH. The need for the project is based on the deteriorated condition of the culvert and the inclusion on the NH State red list, as well as the fact that existing crossing is undersized. The project was previously discussed on November 21, 2018. Since that time, the project was presented to the Town, and Alternative 1A was determined to be preferred, due to the short term closure. Wetlands delineation and the Stream Crossing Assessment were conducted in June and April of 2018, respectively. The NHB coordination was updated in 2020 and is current. It was also determined through e-mail correspondence that a wildlife shelf was not practical at this location.

The existing precast concrete box culvert is 10' wide by 7' high with a length of 30' under the roadway. The wingwalls extend parallel to the brook at the inlet and outlet which adds an additional 7.5' of

channelization. The existing box culvert has no natural bed material, and the concrete bottom extends through the ends of the wingwalls with a total length of 37.5'. The new configuration will remove a total of 37.5' of concrete stream bed. The existing straight wingwalls will be replaced with 45 degree wingwalls, reducing approximately 7.5' of existing channelization.

The preferred alternative is to replace the 10' wide box culvert with a 22' wide precast concrete box culvert, 8' deep and 30' long. A 2' bed of simulated stream material will be placed in the culvert and over a 2' deep layer of riprap at the inlet and outlet of the culvert. The roadway width will be maintained, with riprap slope protection added.

This project falls into a category noted by DOT as one of the few remaining projects where the field work was completed prior to the current rules. The proposed culvert was sized prior to the current Stream Crossing Rules adopted in 2019. The 22' width is reflective of a bankful width of $16.2' \times 1.2 + 2'$.

To comply with current rules, due to the crossing's slight entrenchment, the opening would need to be 38' wide. This is not practical at the site. It would require a bridge structure, which would raise the roadway profile within the floodplain. The wider opening would lead to additional property and resource impacts as well, including wetland, stream, Shoreland and floodplain impacts. Additionally, it would require a significantly longer roadway closure to install, and the costs would also significantly increase to construct the full bridge.

The project will be constructed during a full roadway closure and detour of South Bennington Road. Water diversion structures will be installed on both the upstream and downstream ends of the culvert, and a 48" temporary pipe will convey the brook during construction. Once the existing culvert has been removed and the new culvert installed, the temporary diversion and structures will be removed, and the stream restored to the culvert. The project is scheduled to advertise in the fall of 2021 with anticipated construction during the summer of 2022.

There are approximately 2,000 sf of permanent impacts to the stream anticipated, as well as 3 sf of permanent wetland impacts. 84 lf of permanent channel impacts are proposed. Additional temporary impacts of 1,150 sf and 85 lf of stream and 175 sf of wetlands are also anticipated.

Stantec proposed the project as self-mitigating, based on the following project elements:

- The project complies with the Stream Crossing rules as they existed at the time of design.
- Simulated streambed material will be placed within the stream where impacted by the project and replace the existing concrete bed through the culvert.
- The structure will pass the 100-year storm for the Russell Brook with 1 foot of freeboard.
- The project will add 125 cy of flood storage.

Karl Benedict, NHDES Wetlands Bureau, noted the improvements to hydraulics and aquatic passage. It is not fully accommodating per the current guidelines, but good as is. He asked about adding a mix of humus and vegetation in the bank riprap. Stantec noted stone intermixed with humus is proposed above the 100-year elevation associated with Russell Brook. He agreed that the stream crossing was self-mitigating. He noted that 904.10 (Alternative Design) does need to be submitted as part of the application as the crossing is not fully compliant.

Lori Sommer, NHDES Wetlands Bureau, noted that the bank riprap shown on the plans impacts the stream and will require mitigation. She asked about leaving the 48" bypass pipe permanently due to the entrenchment of the crossing. Due to use of plastic pipe and long-term maintenance concerns this was not supported by DOT. S. Large also clarified that the proposed crossing does meet the Q100 with 1' of freeboard, so accommodation for additional flow is not necessary from a hydraulic standpoint in the design.

It was asked if the simulated stream material could be intermixed with the riprap below the 100-year elevation. This could allow the riprap to be self-mitigating. It was suggested that this be reviewed. Otherwise, linear foot of riprap along the channel for each bank will need to be counted as part of an ARM fund calculation. Lori noted the bank impact is measured parallel to the brook. The channel is considered self-mitigating. Lori noted the 3 sf in the PRA wetland would require mitigation under the new rules since the entire project is within the floodplain (of the Contoocook River).

Carol Henderson, NHFG, asked about the construction timeline. It is planned for the summer of 2022, during low flow season. Wildlife friendly erosion control will be necessary due to the presence of the wood turtle. She noted that silt fence and similar barriers need to be installed early. Also, the duration of bank impacts should be minimized, and leaflets provided to the contractor due to the wood turtle's presence.

Peter Steckler, TNC, noted he has seen erosion issues with simulated streambed materials in these types of bottleneck crossings. Suggested a coarser simulated material that might be less likely to wash out of the culvert, and utilizing larger stones at the outlet to help lock the simulated stream bed material in. Melilotus Dube, NHDOT Bureau of Environment, noted that the project wetland permit application is anticipated to be submitted in the near future and the application and plans would be updated based upon the meeting discussion, including to show self-mitigation for the banks, if possible, or provide an arm fund calculation for the banks if unable to be self-mitigating, and would coordinate with staff. The intent was not to have to return to the Natural Resources meeting for the project to discuss mitigation. L. Sommer agreed that follow up via email is acceptable.

This project has been previously discussed at the 11/21/2018 Monthly Natural Resource Agency Coordination Meeting.

Jefferson, #42558 (X-A004(910))

Stephen Hoffmann introduced the Jefferson 42558 project involving the replacement of the US Route 2 Bridge over Priscilla Brook (Bridge No. 140/097) and the replacement of a culvert located 200' to the southeast that carries an unnamed stream under US Route 2 in Jefferson, New Hampshire. The majority of the resource identification has been completed and an alternative analysis has evaluated potential replacement structures. A public meeting is scheduled for April 2021. The project is currently scheduled to advertise in August 2022.

Bridge 140/097

Bridge 140/097 consists of a 10' jack-arch bridge founded on stone masonry abutments and was originally constructed in 1900. A roadway/bridge rehabilitation and widening project in 1979 extended the bridge on the upstream and downstream sides by installing a concrete slab superstructure founded on concrete abutments. Priscilla Brook is a perennial stream with a 2.05 square mile watershed, making this a Tier 3 stream crossing. A stream assessment was completed in November 2020 and the average Bankfull width was determined to be 11'. There are wetlands located adjacent to the bridge and roadway. Based on the results of the stream assessment and the Rosgen Stream Classification System the channel is a Type E channel. Additional resources in the vicinity of the proposed project (both the bridge and culvert) include 2015 New Hampshire Wildlife Action Plan mapped 'Highest Ranked Habitat in NH' and the project is located within the range of the federally threatened northern long-eared bat and Canada lynx.

The purpose of the proposed project is to address the deterioration of the existing bridge and the hydraulic opening. The project is needed because the bridge deck, superstructure, and substructure are Condition State 4 (Poor) and the bridge is included on the State Red List.

Increases to the bridge span are limited by adjacent driveways in close proximity to the bridge. Increases to the roadway profile, or the span length/layout will likely have ROW impacts and impacts to access of adjacent properties.

Three span alternatives were evaluated for the replacement bridge structure based on geomorphic compatibility. Alternatives are:

- 1.) **106' Span:** Fully compliant with NH Stream Crossing Rules
 $[11'(\text{Wbf}) \times 9.7 (\text{Entrenchment Ratio}) = 106']$
 - Not feasible at this location due to the constraints of the site.
 - Cannot lengthen bridge span to the west due to the driveway in the SW corner.
 - Impacts driveway to the NE.
 - Increase in roadway profiles results in increased ROW and environmental impacts.
 - Significant increase in cost and duration.

- 2.) **24' Span:** Alternative design using Rosgen stream channel type entrenchment ratio.
 $[11'(\text{Wbf}) \times 2.2 (\text{Rosgen Type E Channel Entrenchment Ratio}) = 24']$
 - Span accommodates bankfull width and meets hydraulic requirements.
 - Provides a 2' wildlife shelf on at least one side.
 - Similar site constraints to the 106' span, this alternative includes minor roadway profile adjustments, increased ROW/environmental impacts, increased construction costs and duration.

- 3.) **15' Span:** Alternative design based on bankfull width
 $[1.2 \times 11' (\text{Wbf}) + 2' = 15.2']$
 - Accommodates bankfull width and meets hydraulic requirements.
 - Provides a 2' wildlife shelf on one side.
 - Provides a 50% increase in span length over existing conditions.
 - No change in roadway profile minimizes impacts to adjacent properties, driveways, and adjacent wetlands.
 - Minimizes construction costs and duration.

Culvert

The existing culvert consists of a 4'x4' concrete box originally constructed in 1930 with 48" CMP extensions added to both the inlet and outlet ends. The culvert carries an unnamed, perennial tributary of Priscilla Brook under US Route 2. The confluence of the two streams is located a few hundred feet southwest of US Route 2 and the proposed project. The stream has a watershed size of 1.05 square miles, making this a Tier 3 stream crossing. A stream assessment was completed in August 2019 and the average bankfull width was determined to be 11'. There are scrub-shrub and forested wetlands located adjacent to the stream in the vicinity of the culvert. Based on the results of the stream assessment and the Rosgen Stream Classification System the channel is a Type B channel.

The purpose of the proposed project is to address the deterioration of the existing culvert and the undersized hydraulic opening. The project is needed because the culvert is in poor condition and there are also flooding concerns associated with the undersized crossing. A sinkhole has also started to develop within the roadway at this location possibly suggesting partial failure of the existing structure.

The culvert crossing location has similar design constraints as the bridge structure, and is located between two driveways, further restricting the size/location of replacement alternatives. Three concrete box culvert alternatives were evaluated based on geomorphic compatibility. Alternatives are:

- 1.) **22' x 4' Opening:** Fully compliant with NH Stream Crossing Rules
 $[11'(\text{Wbf}) \times 2.0 (\text{Entrenchment Ratio}) = 22']$
 - Not feasible at this location due to the constraints of the site.
 - Increasing opening to the west would impact driveway to the west.
 - Requires an increase in roadway profile, resulting in additional ROW and environmental impacts.
 - Increase in construction cost and duration.

- 2.) **15' x 4' Opening:** Alternative design based on bankfull width
 $[1.2 \times 11' (\text{Wbf}) + 2' = 15.2']$
 - Span accommodates bankfull width and meets hydraulic requirements.
 - Similar site constraints to the 22' x 4' option, this alternative includes minor roadway profile adjustments, increased ROW/environmental impacts, increased construction costs and duration.

- 3.) **9' x 4' Opening:** Alternative design based on hydraulic requirements.
 - Passes the 50-year storm event without overtopping.
 - Embedded 2' to provide a natural substrate through the structure (actual structure size would be 9' x 6')
 - The 9' width would increase the size of the existing opening > 100%
 - No change in roadway profile minimizes impacts to adjacent properties, driveways, and adjacent wetlands.
 - Minimizes construction costs and duration.

In addition to the bridge and culvert alternatives, two traffic control methods are being evaluated. The first alternative would involve maintaining signalized two-way alternating one-lane traffic through two phases of construction. The second alternative involves maintaining two lanes of traffic in both directions also through two phases of construction. This alternative would result in increased temporary ROW and environmental impacts associated with shifting the alignment and the construction of a temporary roadway. This alternative is being evaluated at the request of the abutter and is not required based on traffic volumes. It is unlikely that the two-lane alternative will be selected due to increased costs, construction duration, and impacts.

The objective of this meeting was to obtain input from the resource agencies on the three culvert alternatives and the three bridge alternatives to help determine the selected alternatives. Based on the design constraints of the site, the design team has recommended the 15' bridge span and the 9' x 4' opening box culvert. The larger structures result in increased environmental impacts, right-of-way impacts, increased costs, increased construction duration, and result in impacts to driveways/access to adjacent properties. For these reasons, the larger alternatives are not feasible at this site.

Sarah Large asked whether the intent of this meeting was to determine if mitigation would be required. Mr. Hoffmann indicated that this was not the intended outcome of this preliminary meeting but would be happy to hear input from the agencies on their initial thoughts regarding mitigation and whether the project would be considered self-mitigating. Ms. Large also asked whether the 15' bridge span and 9' x 4' culvert opening passed the 50 and 100-year storms. Brian Colburn indicated that because the proposed structure is a culvert, it is only designed for the 50-year storm, but the roadway doesn't overtop at the 100-year. Sam White also confirmed that the 15' span passed the 100-year storm with 1-foot of freeboard.

Karl Benedict recommended that the NHDES stream crossing worksheet be completed for both crossings to help identify and address requirements. Mr. Benedict also asked if any Priority Resource Areas (PRAs)

were present, whether the outlet was perched or if scour was occurring downstream. Mr. Hoffmann stated he was pretty sure no PRAs were located in the vicinity but wanted to double check the resource mapping before giving a definitive answer. Brain Colburn indicated that there is a 2.5 deep scour hole at the outlet, but the banks were stable. Mr. Benedict also suggested comparing the velocities of the reference reach with the velocities through the structure. Mr. Benedict also suggested including a restoration/planting plan that focused on areas of temporary impacts.

Lori Sommer indicated that she was unable to determine if the project could be self-mitigating at this time since impacts had not been determined. She indicated that we would need to confirm the presence of any PRAs, address all applicable rules, and nail down the design/impacts. Ms. Sommer also recommended that the limits of disturbance be minimized to retain the vegetated riparian buffer areas adjacent to the streams.

Carol Henderson highlighted the positive benefits of the wildlife connectivity improvements. She indicated she was interested in the public input and would prefer larger alternatives but understands the constraints.

Amy Lamb confirmed that no NHB records were identified in the vicinity of the project and had no additional comments.

Mike Hicks had no comments.

Jean Brochi had no comments.

Pete Steckler asked which side the wildlife shelf would be located on and how much headroom would be provided. Mr. White explained that the shelf would be located in front of the southeast abutment and would provide approximately 2-3 feet of headroom. Mr. Steckler suggested possibly lowering the shelf to accommodate additional headroom. Christine Perron explained that the shelf would be located at or slightly above the ordinary high-water elevation, and that the shelf was designed for small mammal passage (consistent with the species identified in the NH Wildlife Action Plan). Mr. Steckler explained that it is acceptable for the wildlife shelves to be regularly flooded during high flows as long as they provide wildlife passage most of the time. Mr. Steckler also asked about wildlife passage through the culvert structure. Sam White indicated that a wildlife shelf is not being incorporated into the culvert replacement structure. Mr. Steckler suggested incorporating a low flow channel to accommodate wildlife passage and improve aquatic organism passage during lower flows.

Kirk Mudgett provided additional photographs of the downstream channel, banks, and outlet, confirming that a scour hole is present; however, the banks appear to be relatively stable, and the outlet is not perched.

Following the discussion from this meeting it is assumed that the resource agencies are in general agreement with the 15' bridge span and 9' x 4' opening box culvert. Next steps for the project involve holding the Public Officials/Public Informational meeting (April 2021), selecting the preferred alternative, and quantifying impacts. The project will be presented again at the June or July 2021 Resource Agency Meeting to confirm the preferred alternative, proposed impacts, and need for mitigation.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Sutton, #42419 (X-A004(839))

Corey Spetelunas, NHDOT Highway Design, introduced the project including the location and description of the scope of work. Sutton 42419 is a 4R job which typically involve resurfacing, relocation, reconstruction or rehabilitation of roadway infrastructure and appurtenances. The work will begin at MM 24.2 and extend 4.6 miles to MM 28.8 on Interstate 89 (I89) north and south and include ramps at Exit 10, for a total of 9.2 pavement miles. The scope of work for this project includes full depth pavement reclaim on the I89 mainline north and south barrels, full depth pavement replacement on the Exit 10 ramps, guardrail replacement, tree clearing for site distances and access to drainage structures, signage upgrades and replacements, minor bridge work including joint repair and paving, rock scaling, widening of the I89 mainline and Exit 10 ramps where necessary, and maintenance, repairs and upgrades to drainage structures. The current advertising date is August 10, 2021 with anticipated construction timeframe of Spring 2022 to Fall 2024 or Spring 2025. The primary purpose of this meeting is to review the anticipated impacts to natural resources, especially impacts to wetland areas under the jurisdiction of the NH Department of Environmental Services (NHDES) Wetlands Bureau (NH Wetlands Bureau) and the US Army Corps of Engineers (USACOE).

C. Spetelunas provided an overview of the various wetland permitting anticipated for the proposed work. First, much of the proposed underdrain replacement will impact jurisdictional wetlands classified as PEM1Ex, which are previously excavated man-made ditch lines. These ditch lines will be returned to existing condition after construction and this work is therefore considered exempt from permitting under RSA 482-A:3, IV(B) and Env-Wt 308.01(b). Additionally, there are several locations which qualify for permitting through NHDES Routine Roadway Maintenance Registration process under Activities RR1, RR5, RR6 and RR8. Remaining locations will be permitted appropriately through the NH Wetlands Bureau Standard Dredge and Fill Permit as a Major Impact Project. This permit will include impacts from tree clearing, slope work and drainage work. These impacts will also qualify for coverage under the USACOE State Programmatic General Permit. Impacts associated with tree clearing are necessary for access to drainage structures and other work areas, as well as for clearing to create safer site distances for the interstate. There is no grubbing proposed so all impacts are anticipated to be temporary and are located within palustrine emergent and forested wetlands and riverine upper perennial and intermittent systems. Impacts associated with slope work are necessary for pavement widening and guardrail replacement. The existing roadway will be widened from 36.5" to a 38" typical on the entire I89 NB mainline and from MM24.2 to MM25.9 and MM26.9 to MM28.8 on I89 SB and widening the Exit 10 ramps shoulders from 4' to 10' where necessary, which will require widening the roadway embankments in these areas and filling in existing ditch lines and then recreating them at a higher elevation. This is expected to result in permanent impacts to palustrine emergent, scrub shrub and forested wetlands.

There are 11 drainage structure locations that will require impacts to jurisdictional wetlands, 3 of which are considered stream crossings and 2 of which are perched locations (one location is a stream crossing that is perched). Temporary impacts to jurisdictional areas are anticipated due to Corrugated Metal Pipe (CMP) culvert rehabilitation, headwall repair/replacement, ditch-line catch basin (CB) replacement, and non-exempt underdrain replacement. Permanent impacts to jurisdictional areas are anticipated due to new headwall construction, stone fill for outlet protection and perch elimination, and ditch regrading. Of the 11 locations discussed above, 7 are proposed CMP rehabilitations which are not located on stream crossings. Possible rehabilitation methods include UV cured-in-place liners, invert rehabilitation and slip-lining, as well as headwall and end section repair or replacement, and outlet regrading and stone installation. These pipes are mostly located within palustrine emergent, scrub shrub and forested wetlands at the inlets and outlets, while some have palustrine wetlands at the inlet and intermittent streams at the outlet. The first of the two perched locations mentioned above is located at a Tier 1 stream crossing, however, there is no work proposed on the culvert so no stream crossing forms will be provided in the SDF application. This location is identified as Drainage Note (DN) 16N located at MM26.6 NB and is a 30"

Reinforced Concrete Pipe (RCP) carrying an intermittent stream with a significant perch and erosion at the outlet. The proposed work will install outlet protection involving regrading and installing stone at the culvert outlet to address the perch. The second perched location is also located on a Tier 1 stream crossing and work is proposed on the culvert so stream crossing forms will be provided in the SDF application. This location is identified as DN 5S located at MM24.7 SB and is a 124' long 24" diameter CMP carrying an intermittent stream with a significant perch and erosion at the outlet. The proposed work will slip line the 24" CMP, replace the outlet end section and construct outlet protection by regrading and installing stone at the outlet to address the perch. Design for outlet protection at these two perched locations will be based off of the Department typical which calls for construction of a stone ramp at 5% slope maximum for a 50' length.

The first of the remaining two stream crossing locations is DN 26N located at MM 27.1 NB and is a 250' long 36" diameter CMP carrying an intermittent Tier 1 stream with a palustrine scrub shrub wetland at the inlet and a palustrine forested wetland at the outlet. The proposed work will slip line the 36" CMP, repair the outlet headwall and regrade the outlet to remove sedimentation build-up. The second of the remaining two stream crossing locations is DN 55N located at MM 28.7 NB and is a 130' long 24" diameter CMP carrying an intermittent Tier 1 stream. The proposed work will slip line the 24" CMP, construct new headwalls at the inlet and outlet and install outlet protection to repair and prevent erosion.

Meli Dube, NHDOT Bureau of Environment, discussed the other environmental resources and concerns in the area which include protected species, conservation lands, contamination, invasive species, and water quality. There are no NH Natural Heritage Bureau or NH Fish and Game concerns for the proposed work, however, the project is located within the range of the federally threatened northern long-eared bat (NLEB). Appropriate consultation with the US Fish and Wildlife Service is underway. There is one conservation land adjacent to the project area, (Sutton Pines) which is privately owned and is managed by the Society for the Protection of NH Forests. There are no anticipated impacts to this resource as all work will remain within the existing State right-of-way. The Land and Water Conservation Fund, Conservation Land Stewardship Program, and the Land and Community Heritage Investment Program have also reviewed the project area and determined that there are no publicly funded conservation lands in the vicinity of the proposed work. There are four known remediation sites within 1000' of the project area, however, there are no concerns for encountering contamination during construction associated with these sites, and also no known PFAS sites within 4000' of the project area. The project will generate excess Limited Reuse Soil which will be managed appropriately. Invasive species were identified and delineated, both Type I and Type II species are present and the project will require an Invasive Species Management Plan.

The proposed roadway widening will result in approximately 80,875 square feet of increased impervious surface area, however, the project also proposes to remove 40,900 sf of impervious surface at the Sutton Rest Area, resulting in a total net increase of approximately 40,000 sf throughout the project area. Coordination with the University of New Hampshire is currently underway to design an experimental stormwater treatment structure for installation at the rest area which is anticipated to treat approximately 50,000 sf of stormwater runoff. Additional locations for stormwater treatment swales are being vetted if determined necessary.

Regarding mitigation, Sutton 42419 is anticipated to be a Major Impact Project. Impacts to jurisdictional areas are not yet finalized but are anticipated to include approximately 24,000 sf of permanent wetland impacts, which would require mitigation as it is over the 10,000 sf threshold. A majority of these impacts are due to the fill in existing ditch lines holding palustrine wetlands associated with roadway widening, which will be reconstructed at a higher elevation. The Department requested that the impacts be considered self-mitigating at a 1:1 ratio due to the proposed reconstruction, similar to when riverine systems in ditch

lines are reconstructed and considered self-mitigating. The project is also estimated to result in approximately 195 lf of permanent stream impact, which is under the 200 lf threshold and would therefore not require mitigation.

Karl Benedict, NHDES Wetlands Bureau, suggested that RRMRs be submitted first so that if any are rejected for some reason, those locations could be included in the SDF application. He also asked if the project was anticipated to impact any Protected Shoreland areas, M. Dube responded that the work has been reviewed for this and there are no anticipated Shoreland impacts. K. Benedict commented that the typical outlet protection detail for addressing perches should be customized to each location and suggested using contours from lidar since survey is not typically acquired for this kind of project. C. Spetelunas confirmed that this is possible. K. Benedict confirmed that DN 16N discussed above is not considered a stream crossing and reiterated that NHDES Bureau of Alteration of Terrain rules and requirements be met for the proposed increase in impervious surface area. Sarah Large, NHDOT Bureau of Environment, stated that the stream crossing form 904.08 should be used for the Tier 1 Intermittent Stream sliplining locations, and K. Benedict concurred.

Lori Sommer, NHDES Wetlands Bureau, asked if the intermittent streams are connected and therefore require consideration for multiple impacts to the same stream? M. Dube replied that many are located within the same wetland systems but are not directly connected, many of them are generated at the outlet of closed drainage system pipes or are connected to palustrine wetlands in the median of the highway. L. Sommer indicated that tree clearing in forested wetlands, even without grubbing, needs to be assessed for forest conversion according to the USACOE guidelines and factored into the mitigation calculation appropriately. L. Sommer also explained that the allowance for the reconstruction of the ditchlines to be considered self-mitigating on a 1:1 ratio is applicable only to streams and not to palustrine wetlands. Alternatively, the Department can propose recreation of the disturbed wetlands to off-set mitigation for those impacts at a 1:1.5 ratio, however, this strategy would require some monitoring commitments to ensure reestablishment of the ditch line wetlands post-construction. L. Sommer emphasized that if permanent stream impacts to exceed the 200 lf threshold, that mitigation must be paid for all permanent stream impacts on the project including those proposed for outlet protection and perch correction.

Amy Lamb, NHDNCR NHB, confirmed that there are no records of protected species in the project area and did not offer further comment. Carol Henderson, NHFG, confirmed that there are no concerns but reiterated that appropriate consultation with USFWS for impacts to NLEB will be required. Jean Brochi, EPA, did not have any additional comments. Peter Steckler, The Nature Conservancy, indicated that this area is important connectivity habitat and requested that the Department look into wildlife collision data in the area and any potential measures that could be installed as part of this project such as alternative guardrail design or sign installation. M. Dube confirmed that this is possible and will follow up.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Sutton-New London #40511 (X-A004(421))

Corey Spetelunas, NHDOT Highway Design, introduced the project including the location and description of the scope of work. Sutton-New London 40511 is a 4R job which typically involves resurfacing, relocation, reconstruction or rehabilitation of roadway infrastructure and appurtenances. The work will begin at MM 28.8 and extend 2.9 miles to MM 31.7 on Interstate 89 (I89) north and south and include ramps at Exit 11, for a total of 7.4 pavement miles. The scope of work for this project includes full depth pavement reclaim on the I89 mainline north and south barrels, full depth pavement replacement on the Exit 11 ramps, guardrail replacement, tree clearing for site distances and access to drainage structures, signage

upgrades and replacements, minor bridge work including joint repair and paving as well as deck replacement at the bridges over NH Route 11, rock scaling, widening of the Exit 11 SB On-Ramp Acceleration Lane, and maintenance, repairs and upgrades to drainage structures. The current advertising date is August 10, 2021 with anticipated construction timeframe of Spring 2022 to Fall 2024 or Spring 2025. The primary purpose of this meeting is to review the anticipated impacts to natural resources, especially impacts to wetland areas under the jurisdiction of the NH Department of Environmental Services (NHDES) Wetlands Bureau (NH Wetlands Bureau) and the US Army Corps of Engineers (USACOE).

C. Spetelunas provided an overview of the various wetland permitting anticipated for the proposed work. First, much of the proposed underdrain replacement will impact jurisdictional wetlands classified as PEM1Ex, which are previously excavated man-made ditch lines. These ditch lines will be returned to existing condition after construction and this work is therefore considered exempt from permitting under RSA 482-A:3, IV(B) and Env-Wt 308.01(b). Additionally, there are several locations which qualify for permitting through NHDES Routine Roadway Maintenance Registration process under Activities RR1, RR5, RR6 and RR8. Remaining locations will be permitted appropriately through the NH Wetlands Bureau Standard Dredge and Fill Permit as a Major Impact Project. This permit will include impacts from tree clearing, slope work and drainage work. These impacts will also qualify for coverage under the USACOE State Programmatic General Permit. Impacts associated with tree clearing are necessary for access to drainage structures and other work areas, as well as for clearing to create safer site distances for the interstate. There is no grubbing proposed so all impacts are anticipated to be temporary and are located within palustrine emergent and forested wetlands and riverine intermittent systems. Impacts associated with slope work are necessary for pavement widening at the Exit 11 ramp described above and guardrail replacement. The Exit 11 ramp shoulder will be widened from 4' to 10', which will require widening the roadway embankment in this area and filling in existing ditch line and then recreating it at a higher elevation. This is expected to result in permanent impacts to palustrine forested wetlands.

There are 21 drainage structure locations that will require impacts to jurisdictional wetlands, 1 of which is considered a stream crossing and 6 of which are perched locations. Temporary impacts to jurisdictional areas are anticipated due to Corrugated Metal Pipe (CMP) culvert rehabilitation, headwall repair/replacement, ditch-line catch basin (CB) replacement, and non-exempt underdrain replacement. Permanent impacts to jurisdictional areas are anticipated due to new headwall construction, stone fill for outlet protection and perch elimination, and ditch regrading. Of the 21 locations discussed above, 17 are proposed CMP rehabilitations which are not located on stream crossings. Possible rehabilitation methods include UV cured-in-place liners, invert rehabilitation and slip-lining, as well as headwall and end section repair or replacement, and outlet regrading and stone installation. These pipes are mostly located within palustrine emergent, scrub shrub and forested wetlands at the inlets and outlets, while some have palustrine wetlands at the inlet and intermittent streams at the outlet.

The first perched location mentioned above is identified as Drainage Note (DN) 11S located at MM 24.9 SB and is a 30" CMP connecting a palustrine emergent wetland at the inlet and an intermittent stream at the outlet. The proposed work will slip line the 30" CMP, repair the inlet, repair the outlet headwall and address the perch. The second perched location is identified as DN 12N at MM 30.0 NB and is a 30" CMP connecting a palustrine scrub shrub and emergent wetland system at the inlet and a palustrine forested and emergent wetland system with an intermittent stream at the outlet. The proposed work involves slip lining the 30" CMP, repairing the inlet, repairing the outlet headwall and addressing the perch. The third perched location is identified as DN 13S at MM 30.0 SB and is a 30" CMP connected a palustrine forested wetland at the inlet and a palustrine forested wetland with an intermittent stream at the outlet. The proposed work involves slip lining the 30" CMP, repairing the inlet and outlet headwalls and addressing the perch. The fourth perched location is identified as DN 13N at MM 30.1 NB and is a 24" CMP connected a palustrine forested and scrub shrub wetland system at the inlet and a palustrine emergent wetland at the outlet. The

proposed work involves slip lining the 24" CMP, constructing a stone apron at the inlet and outlet and addressing the perch. The fifth perched location is identified as DN 14S at MM 30.1 SB and is a 24" CMP connecting a palustrine emergent wetland at the inlet and a palustrine forested wetland with an intermittent stream at the outlet. The proposed work involves slip lining the 24" CMP, regarding the ditch at the inlet, constructing a stone apron at the outlet, and addressing the perch. The sixth perched location is identified as DN 39N at MM 31.2 NB and is a 54" Reinforced Concrete Pipe (RCP) and carries a Tier 1 intermittent stream with a palustrine scrub shrub and forested wetland system at the inlet and a palustrine emergent wetland at the outlet. Proposed work involves constructing a stone apron at the outlet and addressing the perch, so no stream crossing forms will be included in the SDF application as there are no proposed impacts to the crossing itself. Design for outlet protection at these perched locations will be based off of the Department typical which calls for construction of a stone ramp at 5% slope maximum for a 50' length.

The only stream crossing location is DN 14N located at MM 30.3 and consists of twin 550' long 84" diameter CMPs carrying Lion Brook (Tier 3 stream) under both barrels of the highway. There is a ponded wetland upstream of the crossing with a dam/water elevation structure immediately adjacent to the inlet, such that the inlet is at a lower elevation than the ponded area. The proposed work will include the shotcrete invert rehabilitation strategy, as well as repair to the inlet structure and outlet headwall.

Meli Dube, NHDOT Bureau of Environment, discussed the other environmental resources and concerns in the area which include protected species, conservation lands, contamination, invasive species, and water quality. There are no NH Natural Heritage Bureau or NH Fish and Game concerns for the proposed work, however, the project is located within the range of the federally threatened northern long-eared bat (NLEB). Appropriate consultation with the US Fish and Wildlife Service is underway. There are three conservation lands adjacent to the project area (Bristol Conservation Easement, Forte Tract, and King Hill Reservation). There are no anticipated impacts to these resources as all work will remain within the existing State right-of-way. The Land and Water Conservation Fund, Conservation Land Stewardship Program, and the Land and Community Heritage Investment Program have also reviewed the project area and determined that there are no publicly funded conservation lands in the vicinity of the proposed work. There are two known remediation sites within 1000' of the project area and coordination is underway to determine if there are concerns for encountering contamination during construction associated with these sites. There are no known PFAS sites within 4000' of the project area. The project will generate excess Limited Reuse Soil which will be managed appropriately. Invasive species were identified and delineated, both Type I and Type II species are present and the project will require an Invasive Species Management Plan. The proposed roadway widening will result in approximately 8,500 square feet of increased impervious surface area, however, no treatment is proposed for this project as it is intended to be accounted for in the proposed treatment for the Sutton 42419 project located immediately south of this Sutton-New London 40511 project area. The project is located in the Protected Shoreland of Lions Brook Dam ponded area and will be permitted appropriately if necessary.

Regarding mitigation, Sutton-New London 40511 is anticipated to be a Major Impact Project. Impacts to jurisdictional areas are not yet finalized but are anticipated to include approximately 11,800 sf of permanent wetland impacts, which would require mitigation as it is over the 10,000 sf threshold. A small amount of these impacts are due to the fill in the existing ditch line holding a palustrine forested wetland associated with roadway widening at Exit 11, which will be reconstructed at a higher elevation. The Department requested that the impacts be considered self-mitigating at a 1:1 ratio due to the proposed reconstruction, similar to when riverine systems in ditch lines are reconstructed and considered self-mitigating. The project is also estimated to result in approximately 410 lf of permanent stream impact, which is over the 200 lf threshold and would therefore require mitigation. The ARM calculator will be used to determine the appropriate amount of mitigation and this will be confirmed via email with NHDES.

Karl Benedict, NHDES Wetlands Bureau, suggested that RRMrs be submitted first so that if any are rejected for some reason, those locations could be included in the SDF application. K. Benedict commented that the typical outlet protection detail for addressing perches should be customized to each location and suggested using contours from LIDAR since survey is not typically acquired for this kind of project. C. Spetelunas confirmed that this is possible. K. Benedict stated that Stream Crossing Forms 904.04 and 904.08 should be used for the Tier 1 locations and that 904.10 should be used for the Lion Brook (Tier 3) location. K. Benedict asked if the structure at the inlet of Lion Brook is a dam and Peter Steckler, The Nature Conservancy, replied that it is and the ponded area is used for recreational purposes. K. Benedict indicated that the Department should coordinate with the NHDES Dam Bureau to determine if any special considerations for the design/construction of the project area needed. K. Benedict requested that the Department investigate and address, if possible, the reason for erosion at some of the perched locations in an effort to prevent continued issues at these pipes.

Lori Sommer, NHDES Wetlands Bureau, indicated that tree clearing in forested wetlands, even without grubbing, needs to be assessed for forest conversion according to the USACOE guidelines and factored into the mitigation calculation appropriately. L. Sommer also explained that the allowance for the reconstruction of the ditch lines to be considered self-mitigating on a 1:1 ratio is applicable only to streams and not to palustrine wetlands. Alternatively, the Department can propose recreation of the disturbed wetlands to off-set mitigation for those impacts at a 1:1.5 ratio, however, this strategy would require some monitoring commitments to ensure reestablishment of the ditch line wetlands post-construction. L. Sommer agreed that since permanent stream impacts exceed the 200 lf threshold, mitigation must be paid for all permanent stream impacts on the project including those proposed for outlet protection and perch correction. M. Dube stated that the NHDES ARM calculator would be used to quantify mitigation and L. Sommer agreed that follow up email coordination with the final payments is acceptable.

Amy Lamb, NHDNCR NHB, confirmed that there are no records of protected species in the project area and clarified that the Sutton-New London 40511 project is associated with NHB20-3497. Carol Henderson, NHFG, confirmed that there are no concerns but reiterated that appropriate consultation with USFWS for impacts to NLEB will be required. Mike Hicks, USACOE, requested additional coordination regarding the tree clearing as not all clearing is considered forest conversion according to USACOE and may not require mitigation. Jean Brochi, EPA, did not have any additional comments. Peter Steckler, The Nature Conservancy, questioned whether the dam structure associated with the Chadwick Meadows Wildlife area at the Lions Brook inlet is necessary and if the Department could remove it to improve the crossing as mitigation. M. Dube will follow up with Carol Henderson regarding the property, as it is managed by NHFG.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Manchester, #29811 (X-A004(311))

Peter Walker (VHB) introduced the South Manchester Rail Trail project, which involves construction of a new 1.0-mile long segment of multiuse trail from Gold Street to Perimeter Road in Manchester. The intent of the project is to develop a continuous bike and pedestrian facility that will safely accommodate all non-motorized users, beginning at Perimeter Road to the south and progressing north to the southern end of the existing paved trail north of Gold Street. Stream impacts would occur at two locations: an unnamed perennial stream where an historic culvert would be reconstructed and at Cohas Brook, where a historic trestle bridge would be rehabilitated, including replacement of a historic stone abutment with a rip-rap slope.

P. Walker described the historic culvert location at the unnamed perennial stream, the extent of the washout/erosion, and the proposed rehabilitation. He also identified the provisional permanent bed and bank impacts to the unnamed perennial stream and flow diversion over the proposed trail alignment. (See attached slides.)

Greg Bakos (VHB) described the existing conditions of the trestle bridge and abutments, particularly the northern abutment pre- and post-failure. He explained that a deposit of debris in the river probably contributed to the stream flow diverting to the abutment, presumably during the 2006 Mother's Day storm. He discussed the sand bar buildup along the southern abutment that we may propose to remove it to help restore the streambed and prevent diversion of stream flow to the north abutment.

P. Walker presented a cross section view of the trestle bridge, including the installation of rip-rap along the northern bank since the restoration of the granite block retaining wall is not feasible. These impacts have been reviewed by NHDHR under Section 106. He also discussed the historic versus existing ground configuration to highlight the extent of erosion along the northern embankment. Cofferdams would be used on both sides to contain the work areas. Riprap along the southern bank would match the existing grade. He discussed the provisional permanent bed and bank impacts to the Cohas Brook.

Coordination on potential rare species impacts is on-going, including the bald eagle, banded sunfish, Blanding's turtle, and peregrine falcon identified on the Natural Heritage Bureau (NHB) DataCheck Report. The US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) report identified no species or critical habitats within the project vicinity. Section 106 coordination is complete and resulted in an Adverse Effect Memo (executed on 4/17/20) and a Memorandum of Agreement (executed on 8/20/20).

Karl Benedict (NHDES) asked if the erosion at the unnamed perennial stream is being addressed relative to overall site drainage. P. Walker believes the erosion is the result of a flood condition which we plan to stabilize with riprap slopes. K. Benedict recommended creating soil sections and partially vegetate the slopes for both streams to reduce the extent of proposed riprap and asked if there have been any considerations for debris removal in the Cohas Brook. If there is debris removal, another form of water diversion would be required, and the project would be classified as a major impact. He also asked whether the design could incorporate a shelf for terrestrial wildlife passage along the riprap for Cohas Brook.

Lori Sommer (NHDES) inquired about the extent of slope work along the Cohas Brook, asking if it will extend outside of the footprint of the existing abutment wall. If so, the additional length of rip-rap beyond the current wall location would require mitigation. P. Walker stated that the intent of the project is to restore/reconstruct the historic grade - which would extend into the current stream channel - the current scour and unstable condition at the base of the wall requires extension of the riprap into the channel. The riprap will bring the existing ground line closer to the historic line. The proposed limit of rip-rap ties into the upstream and downstream areas which shows that we are restoring a substantial bank failure rather than filling into the stream channel. The purpose of the riprap is to preserve the historic infrastructure. He also mentioned the mapped floodplain wetland priority resource area (PRA) located downstream of the bridge, is outside the proposed limits of disturbance. L. Sommer added that the identified species on the NHB report and their habitat may also constitute PRAs, which would also trigger mitigation. P. Walker stated that coordination with the NH Fish and Game Department regarding the identified species will commence soon. L. Sommer clarified that no mitigation would be required for the riprap that is located in the area of the bank that previously existed. However, the portion of riprap that goes beyond that area farther into the channel may require mitigation for the linear impacts.

Carol Henderson (NHF&G) suggested that we have continued conversations with Kim Tuttle. NHF&G typically refers to Chris Martin (NH Audubon) during construction for the bald eagle and peregrine falcon. She also mentioned that Kim may have some concerns about the new paved trail relative to the Blanding's turtle. C. Henderson asked if tiering of the bank for the wildlife crossing would be possible. P. Walker responded that the design team could investigate developing a bench or use vegetation to establish a wildlife crossing.

Amy Lamb (NHB) inquired further about the potential opportunity for a more terraced embankment to have a more naturalized and partially vegetated embankment. She had no concerns for plants or exemplary natural communities but recommended the use of native vegetation wherever possible.

Mike Hicks (USACE) noted that Cohas Brook is Essential Fish Habitat. He suggested we do some research and he could assist with the submission of forms to the National Marine Fisheries Service, if needed. He confirmed that the USFWS IPaC report did not identify any species. He requested to coordinate with VHB to expedite the process and give Mike Johnson from NOAA the information he needs.

Peter Steckler (Natural Conservancy) reiterated that we should investigate terracing options along the proposed rip-rap embankment. He suggested that we also consider mulching in the bank and staking it down with fabric and applying a native seed mix, and suggested we look at project in Vermont for examples of this approach.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Candia-Raymond, #43221 (X-A0005(058))

Jason Tremblay presented this initial review of bridge preservation work to extend the useful life of the decks of two bridges in Candia and one in Raymond along NH Route 27. All three bridges were constructed in the 1930's and widened in the 1970's.

J. Tremblay individually summarized, in a power point presentation, the anticipated work at each bridge, which will consist of the removal and replacement of bridge pavement and membrane, partial and full depth deck repairs, and installation of crack control joints, as required. No repairs to the abutments or wing walls are required at all three bridges. Marc Laurin briefly identified the environmental resources associated with each bridge. He stated that he noted that the bridges were directly adjacent to wetlands, and that formal wetland delineations will be conducted this spring.

For all three bridges, the NHNHB database search has identified Threatened and Special Concern turtle species, northern black racer, bridle shiner and American eel vertebrates species. Coordination with Fish and Game has occurred and preliminary measures to address the potential impacts have been provided. Hollow Joe-Pye weed and Red threeawn plant species may occur within the project area. The FWS IPaC database identified the federally threatened Northern Long-eared Bat and Small Whorled Pogonia. Coordination with FWS concluded that there would be no concern with the Small Whorled Pogonia. Several invasive plant species are located within the project area.

The NH 27 bridge over North Branch River (Candia #184-102) - J. Tremblay identified that access would be from the upstream side (northeast quadrant) from within DOT ROW of the former bridge alignment. It is anticipated that no impacts within the streambeds will occur as work on the underside of the bridges could be conducted from platforms attached to the abutments. M. Laurin identified that the North Branch River is a Tier 3 stream and an outstanding resource water watershed. It is a Designated River, and

Forested and Scrub-Shrub wetlands are adjacent to the crossing. The bridge is within its 100 year floodplain.

The NH 27 over Beane Brook (Candia #189-103) - J. Tremblay identified that access would be from the downstream side (southwest corner) from within DOT ROW. It is anticipated that no impacts within the streambeds will occur as work on the underside of the bridges could be conducted from platforms attached to the abutments. M. Laurin identified that Bean Brook is a Tier 3 stream as it is within the 100 year floodplain of the North Branch and in its outstanding resource water watershed. It is a tributary to the North Branch a Designated River, and Emergent and Scrub-Shrub wetlands are adjacent to the crossing.

The NH 27 over Lamprey River (Raymond #083-151). J. Tremblay identified that access would be over the wings on the corners of the bridge within DOT ROW. It is anticipated that no impacts within the streambeds will occur as work on the underside of the bridges could be conducted from a barge secured to the bridge piers. M. Laurin identified that the Lamprey River is a Tier 3 stream. It is a Designated River, and Forested and Emergent wetlands are adjacent to the crossing. The bridge is within a designated floodway and 100 year floodplain.

Karl Benedict suggested that DOT investigate if each individual bridge would qualify for a PBN for repairs within an existing Tier 3 crossing under Env-Wt 904.09. He stated that restoration of the access points would be required. Further coordination with DES would be required to determine if access impacts would put the project impacts over the minimum threshold. He stated that one permit could be issued if PBNs are not appropriate.

Lori Sommer confirmed that if the impacts are temporary, mitigation would not be required.

Carol Henderson stated that when the impacts are better defined, further coordination with Fish & Game would be required on how to minimize potential impacts to the species.

Amy Lamb stated that there is likely no concern with the Red threeawn as this plant was identified in the adjacent utility corridor and if there are no impacts in that area the plant would likely not be present in the vicinity of the bridges. She suggested that during the wetland delineation effort the presence of Hollow Joe-Pye weed be investigated and that it should be identifiable even now before the growing season as its stems are persistent through the winter.

Mike Hicks inquired about the Wild and Scenic Designation status of the Lamprey River. He was informed that the designation does not extend to the project area. Mike also reminded DOT that the Lamprey River is EFH habitat and coordination with NOAA NMFS is required.

There were no further concerns from the other agencies.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Portsmouth-Kittery, #15731 (A000(909))

Christine Perron provided an overview of the permitting considerations for re-setting the upstream cable at the Sarah Mildred Long (SML) Bridge. The SML bridge carries US Route 1 Bypass over the Piscataqua River between Portsmouth NH and Kittery ME. The bridge was recently replaced, and a Google Earth image was provided, showing the location of the new bridge and the former alignment over the river. The lift span is located in the center of the river, with the state line running through the middle. This stretch of

the river is within a federal navigation channel that is managed by the Army Corps. The lift span has two submarine power cables running between the two towers roughly parallel to the bridge. Following the placement of the cables, concrete block mats were laid over them in the middle of the channel to add further protection.

The bridge replacement project was initiated about 10 years ago. Endangered Species Act and EFH consultations were completed 2012-2013, with an agreement to complete in-water work between Nov 15 and March 15. The project required a number of other permits and approvals, including an Army Corps Individual Permit (NAE-2013-01623), NHDES Major Impact Dredge & Fill Permit (2014-01053), and Individual Water Quality Certificate (2014-404I-001). Construction of the new bridge took place over several years and the new bridge was open to traffic in the Spring of 2018.

Because the project is within a federal navigation channel, the project team had to work closely with the navigation branch of the Army Corps. As part of that coordination, the Corps required as a condition of the IP that the submarine cables be buried at least 42 feet below MLLW. It was discovered following construction of the cables that the contractor did not place the cables at the appropriate depth. Sonar scans showed part of the upstream cable about 3.5 feet higher than required. The Contractor, in fact, just placed the cables on top of the streambed without burying them. Since this issue was discovered, MaineDOT has been coordinating with the Corps. The Corps has confirmed the need for resetting the upstream cable to the required depth in order to protect the cable from anchor drag from large ships in the channel. Concurrently, MaineDOT was also engaged in legal disputes with the Contractor. Ultimately, a legal settlement was reached and included the requirement for the Contractor to address the upstream cable.

To address the cable depth of the upstream cable, the following construction sequence is anticipated:

- 1) Remove the existing cable mats (either set aside or placed on barge)
- 2) Set aside the entire length of the existing upstream cable (+/- 300 feet)
- 3) Excavate approximately 125 feet of river bottom (75 feet in NH)
 - 'long reach' excavator to reach from the barge to the river bottom
 - underwater hand jetting may also be used
 - excavated material will be placed to the side on the riverbed.
- 4) Re-set cable and re-install concrete mats.

The initial plan was to require the contractor to complete the work as soon as possible (June-July 2021); however, due to concerns regarding fisheries and to accommodate permitting needs, starting work in early August is now proposed.

Factors related to turbidity were summarized. The excavation will be carried out sequentially over a period of 30-60 days within short windows of time within each tide cycle. Due to the high velocities in the river, which average 1.7 to 2 ft/sec, but are often much higher, the substrate of the riverbed is primarily gravel and cobble. For consultation purposes, it has been assumed that sediment plumes could potentially extend up to 2,400 feet upstream or downstream but likely no more than 300 feet in width due to small work area. The upstream and downstream distances are based on the standard distances used for Section 7 effect analysis for mechanical dredging. However, the Army Corps Piscataqua River turning basin project assumed that the majority of the sand and gravel to be dredged for that project would settle out within 1,000 feet of dredging. That assumption was based on prior monitoring conducted during Boston Harbor and other dredging operations while dredging silty material, which showed that the majority of resuspended material settled within a 1,000 feet from the dredge. Given the coarse substrate at the SML and the fact that much less material will be moved for the cable, it is reasonable to assume that any turbidity plume would not extend as much as 2,400 feet. The currents in this location make turbidity curtains ineffective and cofferdams are not practicable given the depth of water, cost, and presence within the navigation channel.

Mapped eelgrass beds are located 2,000 feet upstream from the bridge and 5,700' downstream. It is not anticipated that a sediment plume from the cable work would reach these locations.

As part of the agreement with the Contractor, MaineDOT will be securing all the environmental approvals and permits required to address the cable.

Consultation with NOAA has been reinitiated and is summarized below:

Endangered Species Act

- Atlantic sturgeon and shortnose sturgeon, Atlantic sturgeon critical habitat
- NOAA concurred with the MaineDOT/FHWA's Not Likely to Adversely Affect determination, which assumed a work window between August 1- March 15. This work avoids the TOY when sturgeon are more likely to be present in the action area.

Essential Fish Habitat

- Updated EFH Assessment submitted to allow for a work window between August 1 – March 15
- Mike Johnson provided one conservation recommendation, which was to complete work as close to the normal dredging work window as possible (Nov 15 – March 15) if any flexibility in scheduling was possible.

Section 404/10 Individual Permit: MaineDOT confirmed with the Army Corps that work could be done under the existing permit. An amendment will be required to allow for a change in the in-water work window. MaineDOT is coordinating with the Corps to get the amendment.

Water Quality Certificate: The project team met with Gregg Comstock from NHDES on March 11, 2021. Gregg stated that he would call Mike Hicks to determine the appropriate next steps but was hopeful that a new WQC would not be required.

NHDES Dredge & Fill Permit: The original permit for the bridge replacement expired in 2019. Two meetings have been held with the DES Wetlands Bureau (February 25, 2021 and March 11, 2021) and it has been confirmed that a new permit would be required for the proposed cable work and that the permit would be classified as major. A request for a rule waiver would be required to allow the proposed in-water work window, since Env-Wt 307.10(i) states that no dredging can occur between Nov 15 and Mar 15. Coordination with NH Fish & Game is underway to determine if a rule waiver would be supported.

Proposed impacts would entail the following:

The total required excavation in NH: 75 feet (perpendicular to the flow of water) x 10 feet wide = **750 SF**
 Additional 40 feet construction disturbance (removal of concrete mats and cable) x 10 feet wide = **400 SF**

All proposed work will be within the previously permitted impact area shown as Locations CCC and DDD in the 2014 wetland impact plans. No new permanent impacts are proposed. The proposed work will result in a total of 1,150 SF of impact. The 2014 impact plan estimated that placement of the cable and mats would require 3,088 SF of impact.

The next steps for this project entail continued coordination with NH Fish & Game, Army Corps, and Gregg Comstock. The intent is to submit the Dredge & Fill application to NHDES by April 2nd to allow enough time to obtain the permit and receive approval of the permit by the NH Governor & Council.

Carol Henderson (NH Fish & Game) asked if NOAA noted specific concerns with allowing the work to begin in August. If the work would require only 30-60 days to complete, Carol asked why it couldn't be scheduled to begin within the preferred in-water work window. Eric Ham noted that Mike Johnson asked this question as well during EFH consultation. MaineDOT is anxious to resolve the issue with the contractor as quickly as possible due to the legal settlement. Also, the work is challenging to complete, with the need for a barge and divers, and these logistics are especially challenging if winter conditions exist. It is also preferred to have a little room for error in scheduling, so a longer potential work window is preferred as a contingency.

Mike Dionne (NH Fish & Game) noted that other anadromous species are present earlier in the spring, so moving the work to August and avoiding the June-July window helps avoid impacts to those species.

Karl Benedict (NHDES) supported the ongoing coordination regarding water quality and in-water work window. He noted that documentation of coordination with NOAA and NHFG should be included with the request for a rule waiver.

Dave Price (NHDES) noted that, because the project involves work in public waters, the permit would require approval by the NH Governor & Council, so the timing of that approval should be taken into account. He also noted that coordination with the Pease Development Authority Division of Ports and Harbor should take place as a requirement of the Dredge & Fill permit in tidal waters.

Lori Sommer (NHDES) noted that the impacts required for placement of the cable in the 2014 permit required mitigation. She recommended that the 2014 impacts and mitigation paid be compared with the impacts now proposed to determine if additional mitigation is required. *Subsequent to the meeting, additional information was provided to Lori and she confirmed that no additional mitigation was required.*

Chris Williams (NH Coastal Program) stated that a Coastal Zone consistency determination was required in 2014 due to the need for an Individual Permit. Since the proposed work will be authorized under the same Individual Permit, he does not anticipate the need for a new consistency determination. However, he asked that he be copied on information provided to the Army Corps for the permit amendment.

Mike Hicks commented that the US Coast Guard needs to be kept closely involved in the proposed work and schedule. He noted that MaineDOT and the Corps have been wrestling with the cable issue for over a year and a major meeting was scheduled for this Friday (March 19th) to discuss the work. This is a challenging site and the cable creates a safety concern. He confirmed that a permit amendment would be required due to the change in in-water work window. Historic resources were cleared as part of the original permit coordination. He did not see any need for a new Water Quality Certificate and would discuss with Gregg Comstock at NHDES. He further noted that there is no viable eelgrass habitat in the work area. He noted that the Corps permit allows for maintenance work, and this is essentially maintenance work.

Jeff Folsom (MaineDOT) added that the issue with the cables has been discussed since 2018. The meeting on Friday with the Corps was primarily to discuss the concrete mats, which must be addressed separate from the cable elevation concern.

Amy Lamb (NHB) commented that the reasoning regarding turbidity and the unlikelihood that sediment would impact existing eelgrass beds made sense but asked if that reasoning was based on any engineering or modeling. C. Perron said that no modeling was completed but water quality monitoring reports from the bridge replacement project were reviewed and there had been minimal concerns with water quality at that time.

Jean Brochi (EPA) asked for clarification on the proposed impacts and 2014 impacts. C. Perron explained that the proposed impacts actually reduce the area of permanent impact as compared with the impacts assumed in 2014. J. Brochi ask for the dimensions of the concrete mats, and if they are moving. J. Folsom responded that the mats consist of 2'x2' blocks that lock together, creating a 8' wide x 300' long mat. Some portions are getting pushed around on the riverbed and some have moved off the cable. The concern is that they will continue to move. A permanent solution is still being worked out.

J. Brochi asked where the dredged material would be taken. C. Perron responded that the material would be cast aside on the riverbed. J. Folsom further clarified that the work needed to achieve the required cable elevation was more consistent with regrading rather than excavating a hole in the riverbed.

Pete Steckler (TNC) asked if any turbidity controls were in place for the original cable installation. Eric Ham replied that no turbidity controls were in place at that time. The cables were just laid on the riverbed.

This project has been previously discussed at the 6/19/2013, 9/18/2013, 1/15/2014, 3/19/2014, 4/18/2018, 6/20/2018, and 9/19/2018 Monthly Natural Resource Agency Coordination Meetings.